



DEFENSE INFORMATION SYSTEMS AGENCY

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IN REPLY
REFER TO: Joint Interoperability Test Command (JTE)

MEMORANDUM FOR DISTRIBUTION

2 Feb 11

SUBJECT: Extension of the Special Interoperability Test Certification of the Fujitsu FLASHWAVE 4100 Large Shelf (LS) with Software Release 6.1

References: (a) DoD Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008
(c) through (f), see Enclosure

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Fujitsu FLASHWAVE 4100 LS with Software Release 6.1 is hereinafter referred to as the System Under Test (SUT). The SUT meets all of the critical interoperability requirements for the Defense Switched Network (DSN) and is certified for joint use. The SUT met the critical interoperability requirements for a Strategic Network Element set forth in appendices 5 and 9 of Reference (c) using test procedures derived from Reference (d). Although the SUT offers European Basic Multiplex Rate (E1) access interfaces, these interfaces were not tested by JITC. No other configurations, features, or functions, except those cited within this report, are certified by the JITC. This certification expires upon changes that affect interoperability, but no later than three years from the date of the original memorandum (17 March 2009).

3. The extension of this certification is based upon Desktop Review (DTR) 4. The original certification is based on interoperability testing conducted by JITC, DISA adjudication of open test discrepancy reports, review of the vendor's Letters of Compliance (LoC), and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona from 7 July through 1 August 2008. Regression testing was conducted from 1 through 5 December 2008 and documented in Reference (e). Review of vendor's LoC was completed on 11 December 2008. DISA adjudication of outstanding test discrepancy reports was completed on 18 December 2008. DSAWG grants accreditation based on the security testing completed by DISA-led Information Assurance test teams and published in a separate report, Reference (f). DSAWG accreditation was granted on 10 March 2009 and expires three years from date of issue. The original certification specified the expiration date

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four years from date of issue; however, this certification is also based on the IA accreditation, which is limited to three years, so expiration date has been changed to reflect the maximum authorized timeframe. This DTR was requested to include software updates for NetSmart 500 and the NetSmart 1500 Network Management Server from versions 3.7 and 5sp520 to Versions 3.12 and 6 respectively. The updated NetSmart 500 and NetSmart 1500 versions were tested with the Fujitsu FLASHWAVE 9500 and FLASHWAVE 7500 at JITC, Indian Head, with no interoperability findings. The JITC determined there was no risk in approving this DTR because NetSmart software updates were validated with no issues on similar platforms to the SUT. Therefore, JITC approved this DTR. The DSAWG accreditation for this DTR was granted on 27 January 2011.

4. The SUT Interoperability Test Summary is shown in Table 1 and the Capability and Feature Requirements used to evaluate the interoperability of the SUT are indicated in Table 2.

Table 1. SUT Interoperability Test Summary

DSN Access Interfaces				
DSN Switch Access		Critical	Status	Remarks
T1 CAS (AMI/SF) DTMF, MFR1, DP		No ¹	Certified	Met all CRs and FRs.
T1 CAS (B8ZS/ESF) DTMF, MFR1, DP		No ¹	Certified	Met all CRs and FRs.
T1 PRI (ANSI T1.619a)		No ¹	Certified	Met all CRs and FRs.
T1 SS7 (ANSI T1.619a)		No ¹	Certified	Met all CRs and FRs.
E1 CAS (HDB3) DTMF, MFR1, DP		No ¹ (Europe only)	Not Tested	The SUT offers this interface; however it was not tested. The SUT E1 CAS interface is therefore not certified by JITC, or authorized for use by the DSN PMO for use within the DSN. This is not a required interface for a Strategic Network Element.
E1 ISDN PRI (ITU-T Q.955.3)		No ¹ (Europe only)	Not Tested	The SUT offers this interface; however it was not tested. The SUT E1 CAS interface is therefore not certified by JITC, or authorized for use by the DSN PMO for use within the DSN. This is not a required interface for a Strategic Network Element.
E1 SS7 (ANSI T1.619a)		No ¹ (Europe only)	Not Tested	The SUT offers this interface; however it was not tested. The SUT E1 CAS interface is therefore not certified by JITC, or authorized for use by the DSN PMO for use within the DSN. This is not a required interface for a Strategic Network Element.
DS3		No ¹	Certified	Met all CRs and FRs.
DS3C		No ¹	Certified	Met all CRs and FRs.
10/100 Mbps Ethernet		No ¹	Certified	Met all CRs and FRs.
Gigabit Ethernet		No ¹	Certified	Met all CRs and FRs.
DSN Transport Interfaces				
Optical Carrier Level	Transport Level	Critical	Status	Remarks
OC-3	VT 1.5	No ²	Certified	Met all CRs and FRs.
	STS-1	No ²	Certified	Met all CRs and FRs.
OC-12	VT 1.5	No ²	Certified	Met all CRs and FRs.
	STS-1	No ²	Certified	Met all CRs and FRs.
OC-48	VT 1.5	No ²	Certified	Met all CRs and FRs.
	STS-1	No ²	Certified	Met all CRs and FRs.
Features And Capabilities				
Features and Capabilities		Critical	Status	Remarks
Synchronization		Yes	Certified	Met all CRs and FRs.
Network Management		Yes	Certified	Met all CRs and FRs.
Security		Yes	See note 3.	See note 3.

Table 1. SUT Interoperability Test Summary (continued)

NOTES:

1 The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element.

2 The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.

3 Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (f).

LEGEND:

10/100BaseT	10/100 Mbps (Baseband Operation, Twisted Pair)	ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
AMI	Ethernet	Mbps	Megabits per second
ANSI	Alternate Mark Inversion	MFR1	Multi-frequency Recommendation 1
B8ZS	American National Standards Institute	MLPP	Multi-Level Precedence and Preemption
CAS	Bipolar Eight Zero Substitution	OC-3	Optical Carrier Level 3 (155 Mbps)
CR	Channel Associated Signaling	OC-12	Optical Carrier Level 12 (622 Mbps)
DISA	Capability Requirements	OC-48	Optical Carrier Level 48 (2.448 Gbps)
DP	Defense Information Systems Agency	PRI	Primary Rate Interface
DS3	Dial Pulse	Q.955.3	ISDN Signaling Standard for E1 MLPP
DS3C	Digital Signal Level 3 (44.736 Mbps)	SF	Super Frame
DTMF	Digital Signal Level 3 (89.472 Mbps)	SS7	Signaling System 7
DSN	Dual Tone Multi-Frequency	SUT	System Under Test
E1	Defense Switched Network	STS	Synchronous Transport Signal
ESF	European Basic Multiplex Rate (2.048 Mbps)	T1	Digital Transmission Link Level 1 (1.544 Mbps)
FR	Extended Super Frame	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
Gbps	Feature Requirements	UCR	Unified Capabilities Requirements
HDB3	Gigabits per second	VT1.5	Virtual Tributary 1.5
ISDN	High Density Bipolar 3		
	Integrated Services Digital Network		

Table 2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	Critical	Requirements Required or Conditional	References
T1 CAS	No ¹	<ul style="list-style-type: none"> • DS1 Interface Characteristics (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.4
T1 SS7 (ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • DS1 Supervisory Channel Associated Signaling (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.4
T1 ISDN PRI (ANSI T1.607/ANSI T1.619a)	No ¹	<ul style="list-style-type: none"> • DS1 Clear Channel Capability (C) • DS1 Alarm and Restoral Requirements (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.4
E1 ISDN PRI (ITU-T Q.955.3)	No ¹	<ul style="list-style-type: none"> • E1 Interface Characteristics (C) • E1 Supervisory Channel Associated Signaling (C) • E1 Clear Channel Capability (C) • E1 Alarm and Restoral Requirements (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.5 • UCR para. A9.5.1.2.5 • UCR para. A9.5.1.2.5
E1 CAS	No ¹ (Europe only)	<ul style="list-style-type: none"> • MOS (R) • BERT (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1 • UCR para. A9.5.1.1
E1 SS7 (ANSI T1.619a)	No ¹ (Europe only)	<ul style="list-style-type: none"> • Secure Transmission (Voice and Data) (R) • Modem (R) • Facsimile (R) • Call Control Signals (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1
DS3, DS3C	No ¹	<ul style="list-style-type: none"> • Delay (R) • Call Congestion Control (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1 • UCR para. A9.5.1.1
10/100 Mbps Ethernet	No ¹	<ul style="list-style-type: none"> • Call Congestion (R) • Voice Compression (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1.3 • UCR para. A9.5.1.1.4
Gigabit Ethernet	No ¹	<ul style="list-style-type: none"> • DS3 Interface Requirements (R) • IP Interface (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.6 • UCR para. A9.5.1.2.9

Table 2. SUT Capability and Feature Interoperability Requirements (continued)

DSN Transport Interfaces			
Interface	Critical	Requirements Required or Conditional	References
OC-3	No ²	<ul style="list-style-type: none"> • MLPP (R) • GR-303-CORE (R) • GR-253-CORE (R) • GR-782-CORE (R) • ANSI T1.105-2001 (R) • DS1 Rate Transport via VT1.5 (R) • DS1 Rate Provisioning (R) • DS0 Call Processing (R) • DS0 to OC-3 Route Assignment (R) • Facility Alarms (R) 	<ul style="list-style-type: none"> • UCR para. A5.5.1 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.3 • UCR para. A5.5.4
OC-12	No ²	<ul style="list-style-type: none"> • DS1 AIS/Yellow (R) • DS0 AIS/DS0 RAI (R) • Synchronization in accordance with GR-518-CORE (R) • Synchronization in accordance with GR-253-CORE (R) • Synchronization in accordance with GR-436-CORE (R) • Reliability (R) • Security (R) • MOS (R) • BERT (R) 	<ul style="list-style-type: none"> • UCR para. A5.5.4 • UCR para. A5.5.4 • UCR para. A5.5.5 • UCR para. A5.5.5 • UCR para. A5.5.5 • UCR para. A5.5.6 • UCR para. A5.6
OC-48	No ²	<ul style="list-style-type: none"> • Secure Transmission (Voice and Data) (R) • Modem (R) • Facsimile (R) • Call Control Signals (R) • Delay (R) • Call Congestion Control (R) • Voice Compression (C) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1.3 • UCR para. A9.5.1.1.4
SUT Features And Capabilities			
Feature/Capability	Critical	Requirements Required or Conditional	References
Synchronization	Yes	<ul style="list-style-type: none"> • Timing (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.1.2.7
Network Management	Yes	<ul style="list-style-type: none"> • Management Option (R) <ul style="list-style-type: none"> - Local Management (Front Panel and/or External Console) (C) - ADIMSS (C) • Fault Management (C) • Loop Back Capability (C) • Operational Configuration Restoral (R) 	<ul style="list-style-type: none"> • UCR para. A9.5.2.1 • UCR para. A9.5.2.2 • UCR para. A9.5.2.3 • UCR para. A9.5.3
Security	Yes	<ul style="list-style-type: none"> • DIACAP and STIGs (R) 	<ul style="list-style-type: none"> • UCR para. A9.6
NOTES: 1 The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element. 2 The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.			

Table 2. SUT Capability and Feature Interoperability Requirements (continued)


LEGEND:			
A	Appendix	ISDN	Integrated Services Digital Network
ADIMSS	Advanced DSN Integrated Management Support System	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
AIS	Alarm Indication Signal	LSSGR	Local Access and Transport Area (LATA) Switching Systems Generic Requirements
ANSI	American National Standards Institute	Mbps	Megabits per second
BERT	Bit Error Rate Test	MLPP	Multi-Level Precedence and Preemption
C	Conditional	MOS	Mean Opinion Score
CAS	Channel Associated Signaling	OC-3	Optical Carrier Level 3 (155 Mbps)
DIACAP	DoD Information Assurance Certification and Accreditation Process	OC-12	Optical Carrier Level 12 (622 Mbps)
DoD	Department of Defense	OC-48	Optical Carrier Level 48 (2.448 Gbps)
DS0	Digital Signal Level 0	para	paragraph
DS1	Digital Signal Level 1	PRI	Primary Rate Interface
DS3	Digital Signal Level 3	Q.955.3	ISDN Signaling standard for E1 MLPP
DS3C	Digital Signal Level 3 - Concatenated	R	Required
DSN	Defense Switched Network	RAI	Remote Alarm Indication
DSS1	Digital Subscriber Signaling 1	SONET	Synchronous Optical Network
DWDM	Dense Wavelength Division Multiplexing	SS7	Signaling System 7
E1	European Basic Multiplex Rate (2.048 Mbps)	STIGs	Secure Technical Implementation Guides
Gbps	Gigabits per second	SUT	System Under Test
GR	Generic Requirement	T1	Digital Transmission Link Level 1 (1.544 Mbps)
GR-253-CORE	SONET Transport Systems: Common Generic Criteria	T1.105-2001	SONET – Basic Description include Multiplexer structure, rates, formats
GR-303-CORE	Integrated Digital Loop Carrier System Generic Requirements, Objectives, and Interface	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
GR-436-CORE	Digital Network Synchronization Plan	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
GR-518-CORE	LSSGR: Synchronization, Section 18	UCR	Unified Capabilities Requirements
GR-782-CORE	SONET Digital Switch Trunk Interface Criteria	VT1.5	Virtual Tributary 1.5
IP	Internet Protocol		

5. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at <https://stp.fhu.disa.mil>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at <http://jitc.fhu.disa.mil/tssi>.

6. The JITC point of contact is Mr. Khoa Hoang, DSN 879-4376, commercial (520) 538-4376, FAX DSN 879-4347, or e-mail to khoa.hoang@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0820404.

FOR THE COMMANDER:

Enclosure a/s


for **BRADLEY A. CLARK**
Acting Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of the Fujitsu
FLASHWAVE 4100 Large Shelf (LS) with Software Release 6.1

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ADDITIONAL REFERENCES

- (c) Defense Information Systems Agency, "Department of Defense Voice Networks Unified Capabilities Requirements (UCR), 21 December 2007
- (d) Joint Interoperability Test Command (JITC), "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
- (e) JITC Memo, JTE, "Special Interoperability Test Certification of the Fujitsu FLASHWAVE 4100 Large Shelf (LS) with Software Release 6.1," 17 March 2009
- (f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Fujitsu FLASHWAVE 4100 Large Shelf (LS) with Software Release 6.1 (Tracking Number 0820404)," 10 March 2009